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The following information was taken from the documentation submitted by the applicant

- (54) Method for packaging material or the like
comprised of fibers
- (57) Method for the packaging of material comprised
of fibers or the like, in particular insulating
material comprised of fibers, with a wrapping of
air-impermeable foil material, preferably of
plastic, with the wrapping being sealed air-tight
on all sides and enough air being removed from
the interior space of the wrapping by
compression and/or suctioning to obtain a
significant reduction in the volume of the fiber
material.

Description

[0001] The invention relates to a method for packaging material comprised of fibers or the like, in particular insulating material comprised of fibers, with a wrapping of air-impermeable foil material, preferably of plastic.

[0002] Material comprised of fibers has proven to be excellently suited for insulation purposes and is used at times in considerable thicknesses.

[0003] However, during the transport from the manufacturer to the retailer and on to the end user, these materials require considerable space.

[0004] The same applies to voluminous textiles such as sweaters, for example, which require a lot of space, in particular when several are stacked into a stack.

[0005] The invention is based on the problem to provide a method that allows a considerable reduction of the required space and thus also the transport costs.

[0006] The object of the invention is attained in that the wrapping is sealed airtight on all sides, and enough air is removed from the interior space of the wrapping by compression and/or suctioning to obtain a significant reduction in the volume of the fiber material.

[0007] The fibers used for these materials have a very high restoring force, which means that no lasting deformation is experienced. However, it is possible to reduce the transport volume by half or less.

[0008] It has proven advantageous if, according to another embodiment of the invention, the fiber material is essentially reduced in its thickness.

[0009] All other dimensions of the fiber material remain essentially the same, which restores the original volume once air is added.

[0010] Another advantageous embodiment of the invention is characterized in that while the air is removed by suctioning, the fiber material is additionally also compressed.

[0011] This significantly facilitates the creation of negative pressure; furthermore, form stability of the reduced volume is largely obtained.

[0012] In doing so, it is very advantageous if, according to a further embodiment of the invention, the fiber material is compressed before it is wrapped with foil material.

[0013] This limits the usage of wrapping material to the absolute minimum.

[0014] The illustration explains the invention with two exemplary embodiments, which show:

[0015] **Fig. 1** a diagram of a pack of insulating material wrapped in foil.

[0016] **Fig. 2** the same pack after part of the air is suctioned off, and

[0017] **Fig. 3** a schematic view of compression means for fiber material.

[0018] **Fig. 1** shows a pack of an insulating material 1 which is comprised of a plurality of layers 2 of mineral fibers. The pack of insulating material 1 is enveloped in a wrap 3 that encloses the pack on all sides.

[0019] The air is suctioned from the wrapping, which creates a negative pressure that contracts the wrapping and thus also compresses the pack of insulating material. In doing so, the volume of the insulating material is reduced by about half; depending on the negative pressure that is applied, the volume reduction may also being significantly greater.

[0020] Fig. 2 shows an insulating material pack 1 that is reduced in volume.

[0021] In various embodiments, the fibers of the insulating material are applied to a paper web. In the reduction of volume, it is advantageous if only the thickness of the insulating material is reduced, whereas the length and width of the segments of insulating material is retained.

[0022] However, the method described here is also suitable for volume reduction with other materials, such as textiles for example, which have a relatively high air volume at packaging.

[0023] Sweaters are a typical example for this; when several sweaters are packaged in a stacked fashion, a lot of air is trapped between the sweaters.

[0024] To this end, it is advantageous if the pack of material is pre-compressed between two plates – as indicated in Fig. 3 – before the air is suctioned off. It is also possible to first cut the wrapping to length from a large piece of foil before sealing it. This limits the usage of foil to the respective minimum.

[0025] After opening the foil wrapping, the material quickly resumes its original form.

[0026] All insulating materials made from fibers, such as sheep's wool, glass wool, rock wool, etc., which have large air pockets between the fibers, are suitable insulating materials for volume-reduced packaging.

[0027] Also [suitable] are all textiles that are comprised not merely of woven fabrics, but are voluminous.

[0028] The volume reduction can be performed either by compressing the pack, or by suctioning off air, or by a combination of the two methods. The

appropriate method is selected depending on the goods to be packaged.

Patent Claims

1. Method for the packaging of material comprised of fibers or the like, in particular insulating material comprised of fibers, with a wrapping of air-impermeable foil material, preferably of plastic, **characterized in that** the wrapping is closed air-tight on all sides and enough air is removed from the interior space of the wrapping by compression and/or suctioning to obtain a significant reduction in the volume of the material.

2. Method in accordance with Claim 1, characterized in that the fiber material is essentially reduced in its thickness.

3. Method in accordance with Claim 1 or 2, characterized in that while the air is suctioned, the fiber material is additionally compressed.

4. Method in accordance with Claim 3, characterized in that the fiber material is compressed before it is wrapped with foil material.

One page of drawings.